

Notice of Allowability

Application No.

09/895,777

Applicant(s)

DOYLE ET AL.

Examiner

Joni Hsu

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to papers received June 16, 2006.
2. ☒ The allowed claim(s) is/are 1-12, 14, 16-18 and 20-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments, see pages 10-12, filed June 16, 2006, with respect to Claims 1-12, 14, 16-18, and 20-27 have been fully considered and are persuasive. The 35 U.S.C. 103(a) rejections of Claims 1-12, 14, 16-18, and 20-27 has been withdrawn.

2. Applicant argues that neither Johns (US006674841B1) nor Flurry (US005455958A) teach a first independent image displayed on a first display device, and a second independent image displayed on a second display device (page 10, paragraph 5).

In reply, the Examiner agrees and the rejection is withdrawn.

Allowable Subject Matter

3. Claims 1-12, 14, 16-18, and 20-27 are allowed.

The following is an examiner's statement of reasons for allowance:

4. The prior art taken singly or in combination do not teach or suggest having a **single** graphics-rendering engine to **concurrently** render two or more independent images for display on multiple display devices, the two or more independent images include a first independent image and a second independent image, **the first independent image displayed on a first display device, the second independent image displayed on a second display device, as**

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recited in Claims 1, 17, 21, 24, and 25. Claims 2-12, 14, 16, 18, 20, 22, 23, 26, and 27 depend from these claims, and therefore also contain allowable subject matter.

5. The closest prior art (Johns US006674841B1) discloses an apparatus, comprising a graphics-rendering engine (208, Figure 2) to render two or more independent images, the two or more independent images include a first independent image and a second independent image (*each application includes a graphic process, which generates graphics data for display*, Col. 4, lines 34-36; *first graphic application for producing a first graphical depiction...second graphics application for producing a second graphical depiction*, Col. 8, lines 15-20). Applications 300, 302, and 304 render graphics data for display by sending rendering command to FIFO 314 in graphics adapter 316 (Col. 4, lines 56-58). Device driver 306 does not have to wait for a context switch to complete before access to FIFO 314 is provided to another graphics process (Col. 4, lines 62-66). This means that while one application is rendering an image, another application can access the FIFO to render another image at the same time without waiting for a context switch to complete. This is the same problem that this invention is solving, according to the disclosure of this application (*graphics-rendering engine need not wait to completely process all of the instructions associated with the first independent image before starting to process instructions associated with the second independent image*, [0064]). Therefore, Johns discloses concurrently rendering two or more independent images; and a graphics context manager (rendering context management (RCM) 312, Figure 3; Col. 4, lines 40-44) to store in a first memory area and restore from the first memory area information describing a first rendering context associated with the first independent image, the graphics context manager to store in a

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second memory area and restore from the second memory area information describing a second rendering context associated with the second independent image (Col. 4, line 58-Col. 5, line 14; *context save command is sent with the context memory address to the adapter FIFO to save the current context to memory*, Col. 6, lines 38-47). Johns describes that in the time sharing environment, each process has certain period of time of the hardware resource ownership (Col. 5, lines 26-28). The RCM controls when each process is allowed to access the graphics adapter (Col. 5, lines 28-47). Therefore, Johns inherently discloses a time allocator to arbitrate the use of the graphics-rendering engine between the two or more independent images, wherein the time allocator comprises a first module to establish a programmable elapsed period of time to use the graphics-rendering engine, the period of time is defined by a programmable number of unit time periods, where each unit time period is defined by a programmable number of real-time quanta (Col. 4, line 62-Col. 5, line 4; Col. 5, lines 22-47). However, Johns does not teach that the images are for display on multiple display devices.

6. Another prior art (Flurry US005455958A) discloses a graphics-rendering engine (X Server program module 14, Figure 1; *as a display resource manager*, Col. 4, lines 14-44) to render two or more independent images for display on multiple display devices (*this invention is designed to function with several display devices connected to it*, Col. 5, lines 25-30). However, Flurry does not teach that the first independent image is displayed on a first display device and the second independent image is displayed on a second display device.

7. Another prior art (Dye US004965559A) discloses a graphics-rendering engine (30, Figure 2) to render two or more independent images for display on multiple display devices (14, 16, 18, 20), the two or more independent images include a first independent image and a second independent image, the first independent image displayed on a first display device, the second independent image displayed on a second display device (Col. 1, lines 6-10). However, Dye does not teach that the graphics-rendering engine concurrently renders the two or more independent images.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Johns (US006674841B1) teaches a method for switching context information to process graphics data for multiple graphics processes (Col. 1, lines 11-15).
2. Flurry (US005455958A) teaches a rendering context manager that provides access to a second process for the second process to begin and operate concurrently with the completion of the first operation (Col. 2, lines 33-60).

3. Dye (US004965559A) teaches a multi-channel graphics display system which is capable of driving multiple independent displays with a single graphics controller (Col. 1, lines 24-27).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joni Hsu whose telephone number is 571-272-7785. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JH


ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER